In the Claims:

Please amend the claims so as to read as follows:

1. (Currently Amended) An optical disk reproducing apparatus for irradiating a surface of an optical disk with an optical beam and for reproducing information recorded on said surface of said optical disk by the formation of a string of a plurality of pits each having one of at least two different depths in said surface of said optical disk, said apparatus comprising:

a photoreceptor element for detecting a quantity of said optical beam reflected from said optical disk;

a pit depth detecting unit for detecting a depth of each said pit based on said quantity of said optical beam detected by said photoreceptor element;

a servo signal generating unit for generating a tracking servo signal ~~whereby~~ for controlling said optical beam ~~may be caused~~ to track said pit string according to a detected deviation between said optical beam and said pit string based on said quantity of said optical beam detected by said photoreceptor element; and

an output control unit for controlling an output tracking servo signal generated by said servo signal generating unit based on the result of said detection by said pit depth detecting unit~~.~~ ;

wherein

said output control unit controls the output of said servo signal generating unit such that a tracking servo signal is output by said servo signal generating unit for causing said optical beam to track said pit string when a pit having a depth that is to be reproduced is being tracked, and said output tracking servo signal also is stored and later output for causing said optical beam to track said pit string when a pit of a different depth is being tracked, based on the result of detection by said pit depth detecting unit.

2. Canceled, without prejudice.

3. (Previously Presented) The optical disk reproducing apparatus according to claim 1, wherein said pit depth detecting unit detects a depth of each pit based on a difference in the quantity of said optical beam reflected from said pit string along a tangential direction.

4. (Previously Presented) The optical disk reproducing apparatus according to claim 3, wherein said pit depth detecting unit includes

a first detecting unit for generating a first signal representing a quantity of said optical beam reflected from said pit string,

a second detecting unit for generating a second signal indicative of a difference in the quantity of said optical beam reflected from said pit string along the tangential direction, and

a third detecting unit for generating a third signal indicative of the depth of each pit, based on said first and second signals.

5. (Previously Presented) The optical disk reproducing apparatus according to claim 4, wherein said third detecting unit includes

a first comparing circuit for comparing said second signal with a first reference value,

a second comparing circuit for comparing said second signal with a second reference value, and

a holding circuit for holding results of comparison by said first and second comparing circuits, at a time of change of said first signal.

6. (Previously Presented) The optical disk reproducing apparatus according to claim 1, wherein said servo signal generating unit generates said tracking servo signal by detecting phase differences in successive quantities of said reflected optical beam detected by said photoreceptor element.

7. (Previously Presented) The optical disk reproducing apparatus according to claim 1, wherein said servo signal generating unit generates said tracking servo signal by detecting a difference in a quantity of said reflected optical beam detected by said photoreceptor element from an inner peripheral side and an outer peripheral side of said optical disk.

8. (Original) The optical disk reproducing apparatus according to claim 1, wherein said photoreceptor element has a cross-shape, divided into two along the tangential direction and divided into two along the radial direction of said optical disk.

9. (Previously Presented) The optical disk reproducing apparatus according to claim 1, wherein said photoreceptor element is divided into two along the tangential direction of said optical disk, one of the two-split photoreceptor elements is further divided into two along the tangential direction of said optical disk, and the other of the two-split photoreceptor elements is further divided into two along the radial direction of said optical disk.

10. Canceled, without prejudice.

11. Canceled, without prejudice.

12. Canceled, without prejudice.

13. Canceled, without prejudice.

14. Canceled, without prejudice.

15. Canceled, without prejudice.

16. (Currently Amended) An optical disk reproducing apparatus for reproducing by optical beam irradiation information recorded on an optical disk by the formation of a track having a plurality of recessed and protruded portions, said apparatus comprising:

a photoreceptor element for detecting a quantity of said optical beam reflected from said optical disk;

a signal detecting unit for detecting a signal indicative of a deviation between said optical beam and said track based on said reflected quantity of said optical beam detected by said photoreceptor element, said recessed and protruded portions of said track of said optical disk being disposed along said track in mixed relation with one another such that said signal based on said reflected quantity of said optical beam from said recessed portions ~~will be~~ is detected with a different polarity than said signal based on said reflected quantity of said optical beam from said protruded portions;

a servo signal generating unit for generating a tracking servo signal by time-averaging said detected signal in a time period shorter than a response time of a tracking servo when said optical beam tracks said track, and a ratio of recessed and protruded portions is set such that said generated tracking servo signal has one of said different polarities; and

a gain changing unit for changing a gain in said tracking servo signal, in accordance with a magnitude of said generated tracking servo signal.

17. (Previously Presented) The optical disk reproducing apparatus according to claim 16, wherein said recessed and protruded portions of said track are pits.

18. (Previously Presented) The optical disk reproducing apparatus according to claim 16, wherein the recessed and protruded portions of said track include a recording mark.

19. (Previously Presented) The optical disk reproducing apparatus according to claim 16, wherein the recessed and protruded portions of said track include a groove and/or a land.

20. (Previously Presented) The optical disk reproducing apparatus according to claim 16, wherein said signal detecting unit detects said signal based on a phase difference in the quantity of said optical beam reflected from said recessed portions and from said protruded portions of said track of said optical disk.

21. (Previously Presented) The optical disk reproducing apparatus according to claim 16, wherein said signal detecting unit detects said signal based on a difference in quantity of said optical beam reflected from said recessed portions and from said protruded portions of said track of said optical disk between an inner peripheral side and an outer peripheral side of said optical disk.

22. (Previously Presented) A method of tracking a track located on an optical disk with an optical beam, said track including a plurality of recessed and protruded portions formed in mixed relation to one another thereon from which information may be reproduced using said optical beam, said method comprising the steps of:

detecting a quantity of said optical beam reflected from said optical disk;

detecting a signal indicative of a deviation between said optical beam and said track based on said detected reflected quantity of said optical beam, a portion of said detected signal based on quantities of said optical beam reflected from said recessed portions of said track having a different polarity than said detected signal based on quantities of said optical beam reflected from said protruded portions;

generating a tracking servo signal by time-averaging said detected signal in a time period shorter than a response time of a tracking servo when said optical beam tracks said track, such that a ratio of said portions of said detected signal based on reflected quantities of said optical beam from said recessed portions and said protruded portions of said track respectively during said time period is set such that said generated tracking servo signal has one of said different polarities; and

changing a gain of said tracking servo in accordance with a magnitude of said generated tracking servo signal.

23. (Previously Presented) The method according to claim 22, wherein said recessed and protruded portions of said track of said optical disk are pits.

24. (Previously Presenteded) The method according to claim 22, wherein
said recessed and protruded portions of said track of said optical disk include a recording mark.

25. (Previously Presented) The method according to claim 22, wherein
said recessed and protruded portions of said track of said optical disk include a groove and/or a land.

26. (Previously Presented) The method according to claim 22, wherein
in said step of detecting said signal, said signal is detected based on a phase difference in the quantity of said optical beam reflected from said recessed portions and the quantity of said optical beam reflected from said protruded portions of said track of said optical disk, respectively.

27. (Previously Presented) The method according to claim 22, wherein
in said step of detecting said signal, said signal is detected based on a difference in the quantity of said optical beam reflected from said recessed portions and said protruded portions of said track of said optical disk between an inner peripheral side and an outer peripheral side of said optical disk.